

Best Management Practices

MISSOURI DEPARTMENT OF CONSERVATION



Ebonyshell

Fusconaia ebena

Common name • Ebonyshell

Scientific name • *Fusconaia ebena*

State status • Endangered

Ecology

The ebonyshell is a typical large river species and has been found in substrates ranging from fine to coarse gravel and cobble to sand and gravel in larger rivers to hard mud. It has been recorded at depths ranging from 1-5 feet in standing to moderately-flowing water to swift current. It seems well adapted to a swift current and may be found in moderately deep waters.

Mussels are filter feeders that pump water through their siphons to collect food particles from the water. They gather necessary nutrients and remove unwanted toxins from the water through this process. Almost all mussel species depend on a fish host to complete their life cycle. Mature adult mussels release glochidia (the immature stage), which must attach to the gills or fins of fish to complete their development. After an average of 2-4 weeks, the newly metamorphosed juveniles drop from the fish and if they land in suitable habitat, they will burrow into the substrate and grow to repeat the cycle. Fish are an important link in the reproductive cycle of mussels and, typically, only certain species of fish are suitable hosts. The ebonyshell uses several species as fish hosts, including the black and white crappies, green sunfish, skipjack herring and large mouth bass. The ebonyshell spawn in May and releases glochidia into September.

Reasons for Decline

The range of the ebonyshell historically extended up the Mississippi River from Missouri into Minnesota and into other large rivers in Illinois, Indiana and Ohio. It is now considered rare, threatened or endangered throughout this range. In the early 1900s, ebonyshell were commercially harvested for use as buttons, and the population declined rapidly. Despite early efforts to restock mussel beds by artificial propagation, populations continued to decline. Reasons for this include increases in pollution and siltation and declines in the fish hosts populations. In addition, dam construction, channelization projects, and continued non-point source pollution from agriculture and urban areas have further reduced the quantity and quality of available habitat.

Specific Recommendations

Although the ebonyshell prefers deep waters in large rivers, repeated dredging and channelization activities destroy mussel habitat and may kill or remove the mussels themselves. In addition, impoundment structures tend to promote siltation, which is known to smother and kill mussels.

→ A survey of the waterways in the project area should be conducted by a trained biologist in order to identify occurring populations of this species.

→ Dams and other impoundment structures that alter water depth and turbidity and promote siltation should be avoided in rivers that contain habitat for the ebonyshell.

→ No work should be allowed below the high bank of the stream between April 1 to August 30.

→ All equipment that enters the waterway should be washed and checked for juvenile zebra mussels before entering another body of water. This will help prevent the spread of this exotic European mussel species that can negatively affect native aquatic organisms and mussel species like the ebonyshell.

General Recommendations

Refer to Management Recommendations for Construction Projects Affecting Missouri Streams and Rivers.

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